Check List the journal of biodiversity data

NOTES ON GEOGRAPHIC DISTRIBUTION

Check List 13(2): 2079, 2 April 2017 doi: https://doi.org/10.15560/13.2.2079
ISSN 1809-127X © 2017 Check List and Authors

Occurrence of *Tachymenis chilensis chilensis* (Schlegel, 1837) (Reptilia: Serpentes: Dipsadidae) and other herpetological fauna from Epu Lauquen Natural Protected Area, Neuquén, Argentina

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Abstract: We report a new specimen of *Tachymenis chilensis chilensis* from Epu Lauquen Natural Reserve, Neuquén, Argentina. This specimen represents the northernmost voucher of *T. c. chilensis* in Argentina and confirms the presence of the subspecies occupying moist habitats remnants in dry areas of northern Neuquén province. Moreover, this record corresponds to the northernmost population of *T. c. chilensis* in a protected area in Argentina. We also found two sympatric anurans, *Rhinella spinulosa* and *Pleurodema thaul*. Both anurans also represent the first record of amphibians at Epu Lauquen Natural Reserve.

Key words: conservation; Patagonia; snake; Subantarctic Forest; Tachymenini

Tachymenis chilensis chilensis (Schlegel, 1837) is a medium-sized snake inhabiting southern Andean slopes in Argentina and Chile that feeds mainly on anurans and lizards (Walker 1945; Greene & Jaksic 1992; Simonetti 2001; Valenzuela-Dellarossa et al. 2010; Avila et al. 2012; Giraudo et al. 2012a). Ortiz (1973) recognized two subspecies of *T. chilensis*: the northern *T. c. coronellina* (Werner, 1898) and the southern *T. c. chilensis* (Schlegel, 1837). Both subspecies have a partially overlapping distribution in Chile (Valenzuela-Dellarossa et al. 2010). In Argentina *T. c. chilensis* have a conservation status categorized as Vulnerable (Giraudo et al. 2012b; Vidoz et al. 2012), and is distributed from northern Neuquén province, 36.4083° S, 70.6228° W, to central-northern Chubut province, 42.9167° S, 71.3333° W, and 42.2119° S, 71.8483° W (Avila et al. 2012; Giraudo et al. 2012a) (Table 1). The distribution and relevant aspects on the natural history of *T. c. chilensis* were recently revisited in Giraudo et al. (2012a), with novel records extending the northern and southern distribution limits of this subspecies in Argentina.

Here we report a new record of *Tachymenis chilensis chilensis* from Argentine Patagonia based on a juvenile male deposited in the herpetological collection of the "Museo Argentino de Ciencias Naturales Bernardino Rivadavia" (MACN 48790; Figure 1; Table 1). The specimen was found in activity. It was collected on the ground during a herpetological survey applying active search in the Área Natural Protegida Epu Lauquen (36.82785° S, 71.10235° W; Datum WGS84, 1,488 m above sea level), Neuquén province, Argentina (Figure 2), in 29 January 2015, 18:20 h, collectors: B. L. Blotto, S. J. Nenda, M. O. Pereyra and P. D. P. Pinheiro. This study was conducted under collection permits from the Ministerio de Desarrollo Territorial, Dirección General de Control de los Recursos Faunísticos number 4351-3792/15.

Identifying *Tachymenis chilensis chilensis* in Argentine Patagonia is unequivocal because it is probably the only Dipsadidae species of snake living in northwestern Neuquén, and all possible sympatric species are very different in morphology and coloration patterns [i.e., *Bothrops ammodytoides* Leybold, 1873, *Philodryas patagoniensis* (Girard, 1858), *P. trilineata* (Burmeister, 1861)] (see color patterns and identification guides in Cei 1986; Scolaro 2005; Scrocchi et al. 2010). According to Ortiz (1973) the characteristic coloration pattern of *T. c. chilensis* its composed by a head dorsally without a defined pattern, but laterally presents two bands: one extends from the

Figure 1. Juvenile male of *Tachymenis chilensis chilensis* (MACN 48790) found in Epu Lauquen Natural Protected Area, Neuquén province, Argentina. Photo by S.J. Nenda.

Table 1. Georeferenceated records of *Tachymenis chilensis chilensis* modified from GIRAUDO et al. 2012a: FML: Fundación Miguel Lillo collection, Tucumán; MACN: Museo Argentino de Ciencias Naturales "Bernardino Rivadavia" Buenos Aires, and the new record presented in this work.

Localities	Latitude (° S)	Longitude (°W)	Province	Altitude (m)	Voucher specimens
Epu Lauquen Natural Protected Area. **New record.**	36.8279	71.1024	Neuquén	1488	MACN 48790
Río Varvarco, near Laguna Varvarco Tapia	36.4083	70.6228	Neuquén	2000	Photographed
Cordillera de Nahuelbuta	37.8011	72.9689	Chile	1100	FML 1641-1643
Lago Moquehue	38.9883	71.3992	Neuquén	1315	MACN 41525
Lago Quillén	39.3714	71.2041	Neuquén	1015	MACN 11714
Lago Curruhué Grande	39.8729	71.4525	Neuquén	1075	MACN 11715
Lago Nontuhe	40.1625	71.6368	Neuquén	660	MACN 11716
Parque Nacional Lanín, Lago Paimún, sendero al Volcán Lanín	39.6958	71.5078	Neuquén	1500	
Junín de los Andes	39.9369	71.0675	Neuquén	930	MACN 32197
Parque Nacional Lanín, Lago Paimún, sendero al Volcán Lanín	39.7022	71.5047	Neuquén	1300	
Parque Nacional Lanín, camino de entrada al Lago Filo Hua-Hum (5 km de la Ruta Prov. 63)	40.5019	71.2831	Neuquén	950	FML 2602
Parque Nacional Nahuel Huapi, Isla Victoria, Lago Nahuel Huapi, Puerto Radal	40.8133	71.6358	Neuquén	840	MACN 9332-9333
Parque Nacional Nahuel Huapi, Isla Victoria, Lago Nahuel Huapi	40.9703	71.5206	Neuquén	830	MACN 8650
Puerto Huemul, Neuquén	41.0325	71.4158	Neuquén	800	MACN 8651
San Carlos de Bariloche, Colonia Suiza, Lago Moreno	41.0954	71.5088	Río Negro	800	MACN 47142 (EX-CENAI 3342)
San Carlos de Bariloche	41.1333	71.3000	Río Negro	780	FML 00271, 1555
San Carlos de Bariloche, La Paloma	41.1583	71.3161	Río Negro	925	MACN 35854
Parque Nacional Nahuel Huapi, Río Manso Inferior, Población Huenchupán	41.5217	71.5242	Río Negro	535	
El Bolsón	41.9675	71.5156	Río Negro	310	MACN 14317-14319, 15313, 28013-28014
Río Azul	41.9981	71.5475	Río Negro	280	MACN 15314
Cajón del Río Azul	41.8511	71.6238	Río Negro	280	FML 20791
Lago Puelo Village	42.0583	71.5956	Chubut	220	
Parque Nacional Lago Puelo, Delta del Río Azul	42.0875	71.6197	Chubut	205	

Continued

Table 1. *Continued.*

Localities	Latitude (° S)	Longitude (°W)	Province	Altitude (m)	Voucher specimens
Parque Nacional Lago Puelo, Delta del Río Azul	42.0922	71.6211	Chubut	205	
Parque Nacional Lago Puelo, Inicio Senda al Mirador, La Playita	42.0981	71.6061	Chubut	205	Photographed
Parque Nacional Lago Puelo, Camping Las Lágrimas	42.0989	71.6831	Chubut	200	
Parque Nacional Lago Puelo, Cerro Cuevas	42.1333	71.6675	Chubut	985	
Parque Nacional Lago Puelo, El Desemboque	42.1472	71.6036	Chubut	400	
Parque Nacional Lago Puelo, El Desemboque	42.1472	71.6036	Chubut	400	
Parque Nacional Lago Puelo, Senda Huella Andina, Cerro Currhumahuida	42.1506	71.6181	Chubut	800	A sloughed skin
Laguna del Plesiosaurio, El Pedregoso	42.1536	71.4164	Chubut	240	Photographed
Lago Esperanza	42.2119	71.8483	Chubut	500	Photographed
Parque Nacional Lago Puelo, Seccional Guardaparque El Turbio	42.2281	71.6678	Chubut	205	Photographed
Parque Nacional Lago Puelo, Loma de La Vega de El Turbio	42.2469	71.7069	Chubut	300	Photographed
Faldeo Cordón Derrumbe	42.2506	71.6494	Chubut	1000	Photographed
Parque Nacional Los Alerces, Isla Don Vicente, Lago Rivadavia	42.6211	71.6683	Chubut	520	
Parque Nacional Los Alerces, Camping Población Neira, Lago Rivadavia	42.6383	71.6725	Chubut	525	
Parque Nacional Los Alerces, Río Menéndez	42.7306	71.7517	Chubut	520	Photographed
Esquel, Parque Nacional Los Alerces	42.9167	71.3333	Chubut	560	MACN 47140 (EX-CENAI 3448)

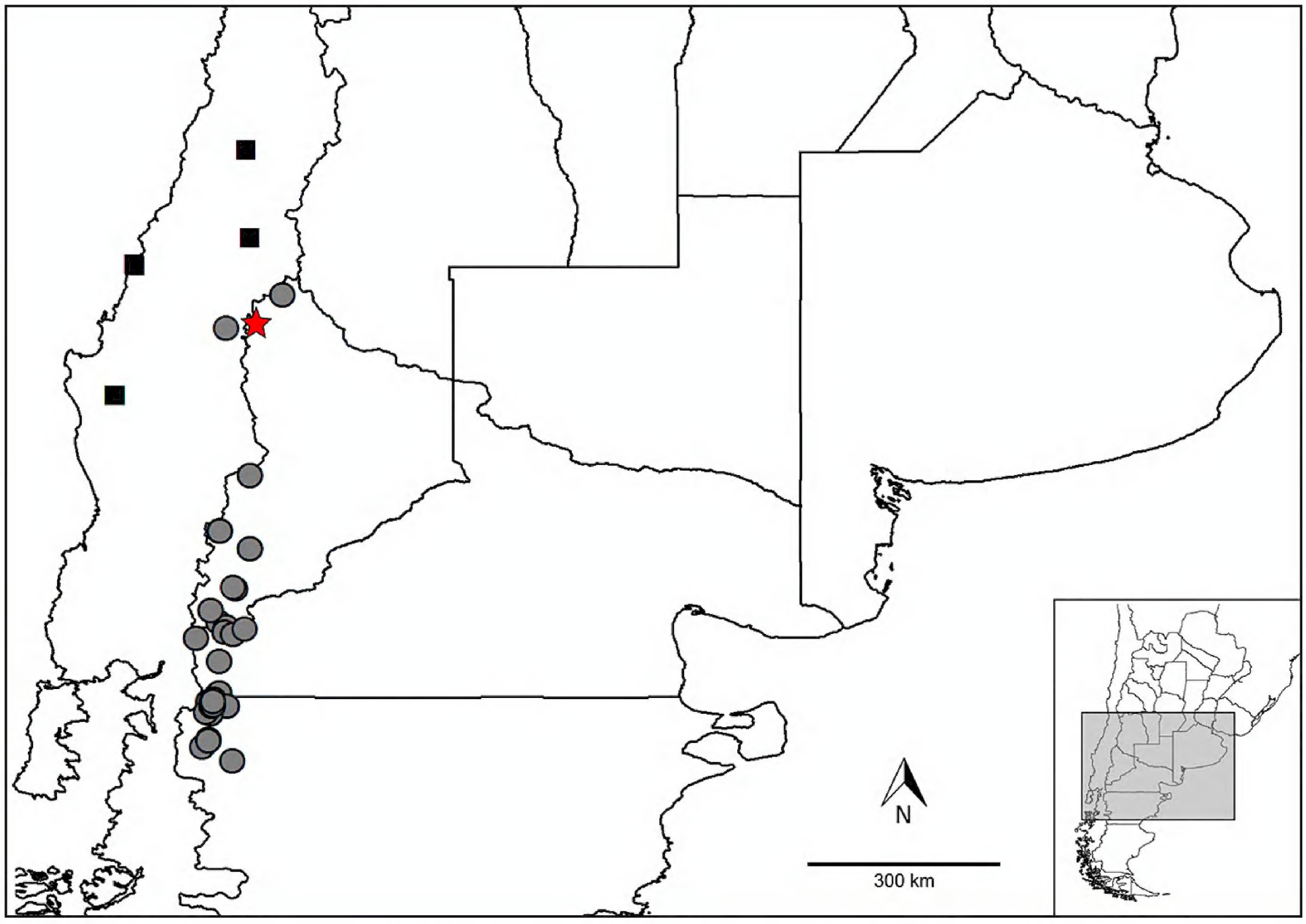

Figure 2. Distribution map of *Tachymenis chilensis chilensis* showing the new locality (red star). Previously known records (modified from GIRAUDO et al. 2012a): grey dots in Argentina, black squares in Chile.

postocular scales to the buccal commissure, and the other from the posterior margin of the supraocular scale, forming an arc in the direction of the latero-ventral region of the neck. Also, according to ORTIZ (1973), *T. c. chilensis* presents in the side of the head a dark subocular spot, directed towards the rear, not generally reaching the lower edge of the supraocular scales, which lies between the third and fourth supralabial scales. In the body, dorsal pattern is composed by a vertebral band light colored on a brown or gray background; on either side a narrow black line is present, one scale broad. The flanks of the body present a dark band, lighter in its upper portion, about a scale and a

half wide. Ventral scales presents small dark spots generally merged at their base; the central part of the pattern is triangular. In several individuals, the ventral region is intensely melanized (Ortiz 1973). The specimen MACN 48790 have dorsal scales in 19–19–15 rows, ventrals 165, cloacal plate divided, subcaudals 41+1, supralabials 7(3+4), infralabials 9(5), temporals in 1+2 rows, nasal entire, 2 preoculars, 2 postoculars, 2 pairs of chin shields, and 1 quadrangular loreal. These scale counts differs with the reported by Walker (1945) for the Chilean populations of this subspecies in the number of subcaudals scales (42 vs 45–53), but fall into de range given by Ortiz (1973) (42 vs 39–54), and there is one more ventral scale than the range given by Ortiz (1973) (165 vs 144–164). Body measurements: 354 mm total length, 299 mm snout-vent length and 55 mm tail length, tail length/total length ratio 0.155 (Figure 1).

The place where this specimen was found belongs to the northernmost remnants of the Subantartic Forest, and represents a mosaic of scrubs and forest of *Nothofagus* spp. along with the presence of grasses in a dry streambed. According to Alfonso & Prina (2006), 67% of the vascular flora of this natural reserve is shared exclusively with Chile. The floristic relevance of this natural reserve is reflected in the biodiversity index obtained by these authors that remark that is almost seven times higher than expected by its size. Moreover, Laclau (1997) mentioned the presence of *Nothofagus glauca* (Phil.) Krasser in the area, the unique record for the species in Argentina. In the study area we also found two sympatric species of anurans, *Rhinella spinulosa papillosa* (Philippi, 1902) (Bufonidae) and *Pleurodema thaul* (Schneider, 1799) (Leptodactylidae); voucher specimens MACN 48324 and MACN 48616–48617, respectively. These species are easily distinguished by the presence of rounded parotoid glands, warty skin and toes broadly fringed in *R. spinulosa papillosa*, and lumbar glands and bright irregular spots on the dorsum in *P. thaul* (Cei 1980). The northernmost known locality in Argentina of *T. c. chilensis* is Río Varvarco, Laguna Varvarco Tapia, Neuquén, and was supported by a photographical record (Giraudo et al. 2012a). The specimen MACN 48790 represents the northernmost voucher of *T. c. chilensis* in Argentina and the locality is located 60 km south from Río Varvarco, Laguna Varvarco Tapia, and 200 km north from previous museum record from Lago Moquehue (38.9883° S, 71.3992° W) (Table 1). This report confirms the existence of populations of *T. c. chilensis* occupying moist natural remaining habitats, generated by local humid condition favored by the existence of lakes and rivers, inserted in dry areas of northern Neuquén. Moreover, this record corresponds to the northernmost populations of this threatened subspecies in a Protected Natural Area in Argentina (Figure 2). The apparent disjunctive distribution of *T. chilensis chilensis* in Argentina may be due to a lack of sampling in the region. *Tachymenis chilensis* was considered Vulnerable in Chile (Simonetti 2001; Vergara et al. 2008). However, the IUCN categorized *T. chilensis* as Least Concern in Chile (Doan & Nunes 2010), but did not evaluate the status of its subspecies nor the Argentine populations. Both anuran species collected during our fieldwork also represent the first records of amphibians at the Epu Lauquen Natural Protected Area, which herpetofauna was not surveyed up to date. Our findings demonstrate that more herpetological samplings are needed in order to obtain a comprehensive inventory of amphibians and reptiles in this natural reserve.

ACKNOWLEDGEMENTS

We are grateful to G. C. Küppers for the help during the preparation of this manuscript, to J. Faivovich for logistical and institutional support during this study. Special thanks to ranger Silvestre Mora for his help during the field trip at ANP Epu Lauquen. We are grateful to the two anonymous reviewers. P.D.P. Pinheiro thanks CNPq for the fellowship at Programa de Pós-Graduação em Zoologia at Universidade Estadual Paulista.

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Authors' contributions: SJN, BLB, MOP and PDPP collected the data, SJN, BLB, MOP, PDPP and AG wrote the text and identified the specimens.

Received: 9 September 2016
Accepted: 12 March 2017
Academic editor: Raul F. D. Sales